



18th European Weed Research Society Symposium

EWRS 2018

17-21 June 2018
Ljubljana, Slovenia

**New approaches for
smarter weed management**

Book of Abstracts

www.ewrs2018.org

Organiser

Kmetijski inštitut Slovenije (KIS) – Agricultural Institute of Slovenia, Hacquetova ulica 17, 1000 Ljubljana, Slovenija

Programme Committee

Dr. Jukka Salonen, Chairman / EWRS Vice-President; Prof. Dr. Hüsrev Mennan, Scientific Secretary; Prof. Dr. Paul Neve, EWRS President

EWRS Scientific Committee

Dr. Theo Verwijst, Department of Crop Production Ecology, Swedish University of Agricultural Sciences, Sweden; Prof. Dr. Garifalia Economou-Antonaka, Faculty of Crop Production Science, Agricultural University of Athens, Greece; Dr. Kirsten Torresen, Norwegian Institute of Bioeconomy Research (NIBIO), Norway; Dr. Roland Beffa, Bayer Crop Science AG, Integrated Weed Management & Resistance Biology, Germany; Dr. Ivo O. Brants, Monsanto Europe S.A, Belgium; Jan Petersen, University of Applied Science Bingen, Germany; Christian Bohren, Research Station Agroscope Changins-Wädenswil (ACW), Switzerland; Dr. Per Kudsk, Professor & Head of Section, Dept. of Agroecology, University of Aarhus, Denmark; Maurizio Vurro, Istituto di Scienze delle Produzioni Alimentari – CNR, Italy; Dr. Marleen Riemens, Wageningen University and Research Centre, Netherlands; Prof. Dr. Svend Christensen, University of Copenhagen, Faculty of Life Sciences, Denmark; Dr. Hanan Eizenberg, Newe Ya'ar Research Center, Israel; Dr. Euro Pannacci, Dept. of Agricultural, Food and Environmental Sciences – University of Perugia, Italy; Dr. Paula Westerman, Group Crop Health, Faculty of Agricultural and Environmental Science, University of Rostock, Germany

Local Organising Committee

Assoc. Prof. Dr. Andrej Simončič, President, Agricultural Institute of Slovenia; Dr. Robert Leskovšek, Agricultural Institute of Slovenia; Dr. Gregor Urek, Agricultural Institute of Slovenia; Prof. Dr. Stanislav Trdan, Biotechnical Faculty, University of Ljubljana; Prof. Dr. Mario Lešnik, Faculty of Agriculture and Life Sciences, University of Maribor; Ela Žilič, M. Sc., Agricultural Institute of Slovenia; Marjeta Urbančič Zemljič, M. Sc., Agricultural Institute of Slovenia

Editor

Andrej Simončič

Published by

Kmetijski inštitut Slovenije, 2018

The publication is published e-only – <http://www.ewrs.org>

Effect of species composition on efficacy of vegetated buffer strips for herbicide runoff mitigation

Fernando De Palo, Marco Milan, Aldo Ferrero, Silvia Fogliatto, Francesco Vidotto
University of Torino, GRUGLIASCO, Italy

Vegetated buffer strips (VBS) may play an important role in creating and maintaining biodiversity, preventing soil erosion and contamination of superficial water bodies from plant protection products (PPPs) and nutrients, as well as in safeguarding the agroecosystem landscape. The aim of the study was to assess the efficacy of VBS with different species composition in reducing concentration of herbicides into the runoff water. Evolution in time of species composition of VBS was also monitored. Two types of VBS were tested: mix of *Festuca arundinacea* and *Trifolium pretense* (mix A) and mixture of leguminous species, including *Trifolium repens*, *T. pratense*, *Medicago sativa*, *Lotus corniculatus*, *Onobrychis viciifolia* and *Hedysarum coronarium* (mix B). Plots with bare soil without covering were included as control (check). Trials were conducted on maize, vineyard and peach orchard fields in four areas of North West Italy during 2015 - 2017. VBS were 5 m wide and were placed downhill of 55 to 200 m² plots. Plant growth was assessed periodically and VBS were mowed at 5-8 cm height at *T. repens* flowering. Runoff water were collected after each event and analysed through HPLC or LC-MS/MS analysis. Terbutylazine, S-metolachlor, mesotrione and desethyl-terbutylazine were searched in maize, while glyphosate and AMPA in vineyard/orchard. Very uniform coverage and stable composition was maintained in mix A, while dominance of one to two species (*M. sativa*, in particular) was observed in mix B. In maize, the highest terbutylazine concentration at 78 DAT was given by check plots (0.35µg/L), while lower concentrations were obtained in mix A (0.12µg/L) and mix B (0.21µg/L) plots. Similar trends were observed for desethyl-terbutylazine and S-metolachlor. In peach orchard, concentration of glyphosate at 97 DAT ranged from 0.75µg/L (mix B) to 0.13µg/L (mix A), while concentration of AMPA was always <0.1µg/L.